



*Bruce L. Webster
Staff Urban Forester
Tennessee Dept. of Agriculture
Forestry Division*

*Wayne K. Clatterbuck
Assistant Professor
Forestry, Wildlife
& Fisheries*



Wayne K. Clatterbuck

Sprout growth from topped silver maple.



Wayne K. Clatterbuck

A "topped" flowering pear.

The practice of topping is so widespread that many people believe it is the proper way to prune trees. However, topping causes a variety of problems in trees that create future maintenance and growth dilemmas for homeowners.

What is Topping?

Topping is the excessive and arbitrary removal of all parts of the tree above and beyond a certain height with *no regard* for the structure or growth of the tree. The vertical stem or main leader and the upper primary limbs on trees are cut back to stubs at a uniform height. As opposed to topping, **pruning** is the selective removal of certain limbs based on the structure, crown form and growth of the tree.



All 3 photos : Ross K. Clatterbuck

Topped black walnut trees with the unwieldy proliferation of branches at the cut area. Note the broken branch hanging vertically in the photo on the far right.

Tree Problems Caused by Topping

← *The balance between the roots and crown is altered.*

Removal of too many branches and leaves reduces photosynthesis or the food-making potential of the tree and depletes the tree's stored reserves needed for maintenance and growth. An arbitrary and excessive removal of crown will (a) cause a like reduction of roots because there is not enough leaf area or food-making capacity to sustain the amount of roots present and (b) a proliferation of sprout growth at the wounded or cut area in an attempt to gain more leaf area to balance the amount of roots. Both results are undesirable for the long-term health and maintenance of the tree.

← *New sprout growth is weak.* The new watersprout shoots are attached to the surface of the stubs, rather than anchored from within the former limbs.

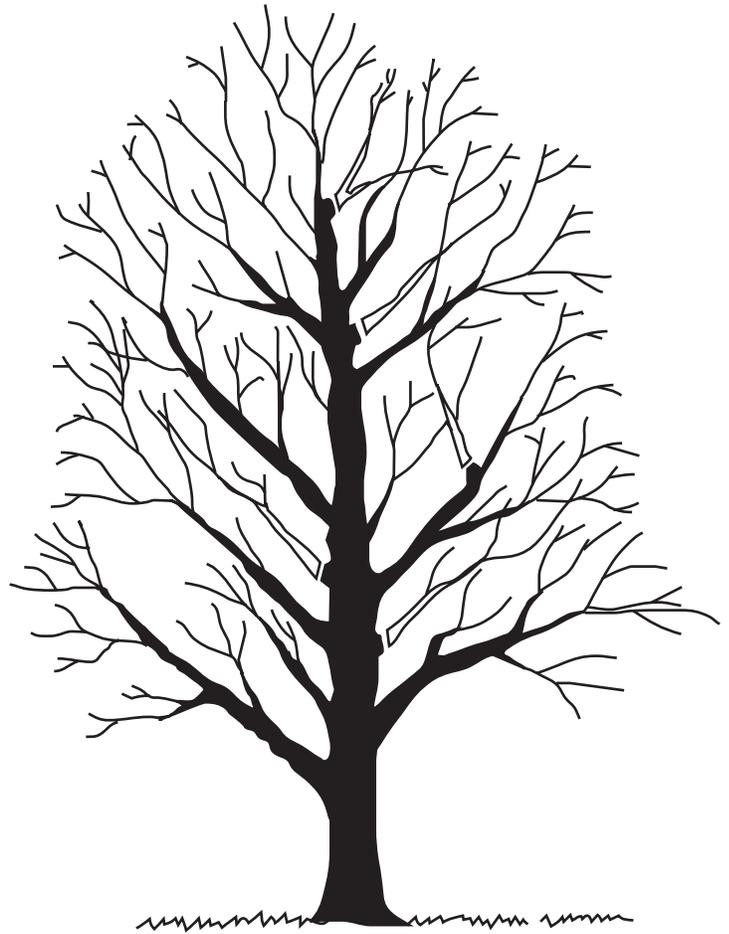
← *Topping can create a hazard.* New shoots from the branch stubs are inherently weak and highly susceptible to breakage from wind and ice storms or weight from excessive growth.

← *Large stubs will not heal.* Trees compartmentalize wounds, some species more poorly than others. Large branch wounds (those greater than 2 inches in diameter) are slow to heal, if they heal at all, increasing the chance of insect attacks and fungal decay entering the wound and spreading throughout the tree.

← *Sunscald can occur.* Bark tissues suddenly exposed to full sun may be burned, damaged, killed or develop disease cankers. Trees with thin bark such as maples, yellow-poplar, flowering cherries, flowering pears and crabapples are especially susceptible to sunscald.

← *Topping disfigures trees.* The natural form and structure of the crown is altered. Unsightly branch stubs, large pruning scars and undesirable, vigorous branch growth (watersprouts) interfere or upset the tree's natural beauty and form. Topping drastically shortens the life of a tree. Topped trees are an eyesore in the landscape and will continue to be an eyesore as trees slowly decline.

← *Topping is only temporary.* A topped tree will grow back to its original height, but its natural form is lost. Weak branches will promote additional maintenance costs.



Proper Pruning

The light colored limbs represent branches that have been removed. The crown has been thinned to reduce wind resistance and improve tree health without leaving stubs or changing the natural shape.

Myths About Tree Topping

Since tree topping is so deleterious to the health of a tree, why is it practiced? Trees are often topped to reduce their size. This can be the result of poor species selection, improper tree placement or fear that a tall tree or its branches might be dangerous and fall on people or structures. This fear is one of the tree myths that lead to topping. Rarely does a healthy tree suddenly fall over or break, even in wind storms. Those trees that usually do are of advanced age, low vigor or unhealthy from mechanical injuries, insect attacks or fungal decay.

Another myth is that topping reduces the risk of storm damage. Actually, the opposite effect occurs. Topping accelerates shoot growth and promotes branches that are attached weakly to the tree. Those branches are more prone to breakage during storm events.

Lastly, trees are topped because they interfere with utility lines, buildings or produce too much shade for sunny areas. These conflicts may be resolved by proper species selection, better placement or correct pruning techniques. If a tree must be pruned every five years, the tree is too large for the site and should be replaced with a smaller tree.

Alternatives to Topping

Select the right tree and plant it in the right place. If the tree is too large for the area where it occurs, remove the tree and replace it with a species that is a smaller size. Refer to UT Agricultural Extension Service publication SP 511, **Plant the Right Tree in the Right Place**, for guidelines on selecting a tree of the correct size. Avoid site obstructions both above and below ground, including utility lines.

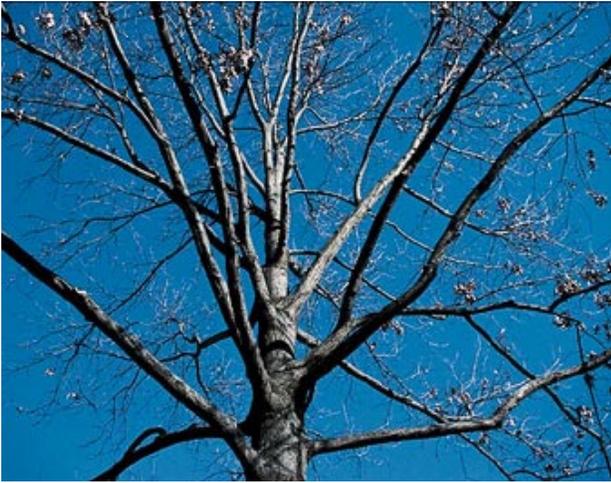
Prune the tree properly. Correct pruning procedures remove branches and thin the crown to reduce wind resistance and improve tree health without leaving branch stubs or changing the natural shape and balance of the tree. Refer to UT Agricultural Extension Service publication PB 1619, **Pruning Landscape Trees, Shrubs and Groundcovers**, for information on proper pruning procedures.

Summary

The practice of topping is not recommended. Topping can lead to decay, storm damage and disfigured trees. Proper pruning that thins the crown with cuts made at branch collars is the best practice for the long-term health of trees. Topping is considered an unacceptable practice by professional organizations such as the International Society of Arboriculture (ISA) and the National Arborist Association (NAA).

Unfortunately, many tree services still top trees and homeowners allow them to continue. Investigate a tree service before hiring them. If a company advocates tree topping, use a different tree service. Look for membership in professional organizations (ISA or NAA). Membership does not guarantee quality, but does indicate a commitment to the profession.



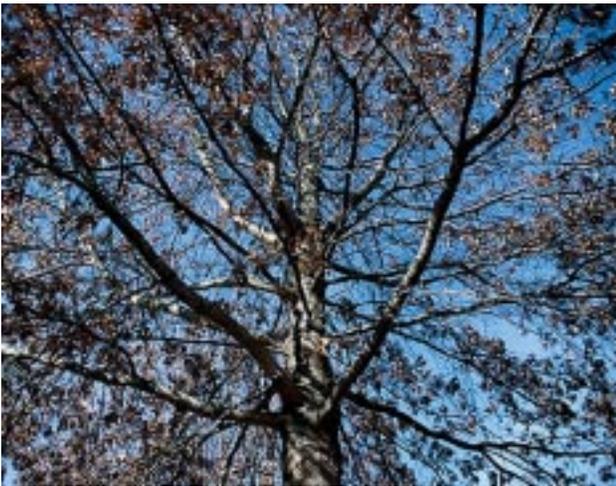


Wayne K. Clatterbuck

Proper pruning and crown thinning of interior branches on pin oak.



Wayne K. Clatterbuck



Wayne K. Clatterbuck

A pin oak in need of interior pruning.



Tree with proper pruning technique.

Appreciation is expressed to Pam Korczynski for design of this publication.

SP 549-15M-11-99

R-12-4910-17-002-00

The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex, age, disability, religion or veteran status and is an Equal Opportunity Employer. COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture, and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914. Agricultural Extension Service Charles L. Norman, Dean

Printing for this publication was funded by the USDA Forest Service through a grant with the Tennessee Department of Agriculture, Division of Forestry. The *Trees for Tennessee Landscapes* series is sponsored by the Tennessee Urban Forestry Council.

